



First Named Inventor:
Michael Barrow

Filing Date:
March 22, 1999

U.S. PATENT DOCUMENTS

Exam. Initial*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (If known)			
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		5,216,278		Lin et al.	6/1/1993	
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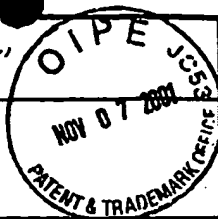
Examiner Signature	DAVID FOSTER	Date Considered	2/11/2002
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Attorney Docket No..
042390P3495C2

Application Number:
09/274,430

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OTHER ART - NO PATENT LITERATURE DOCUMENTS

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<i>JB</i>		1991 Proceedings, 41 st Electronic Components & Technology Conference, May 11-16, 1991, Atlanta, Georgia	
		Bruce Freyman et al., "Surface Mount Process Technology for Ball Grid Array Packaging, Amkor Electronics Inc., Tempe, Arizona, pgs. 81-85	
		Bruce Freyman et al., "Surface Mount Process Technology for Ball Grid Array Packaging"; JUNICHO SHIMIZU, "Plastic Ball Grid Array Coplanarity" Citizens Watch Co, Tokoy Japan, Surface Mount International Conference & Exposition, San Jose, California, Aug 29-Sept 2, 1993, pgs. 81-91	
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		Randy Johnson et al., "Ball Grid Array Technology: A Feasibility Study of Ball Grid Array Packaging", Nepcon Conference, Proceeding of the Technical Program, June 14-17, 1993 Boston Massachusetts, pgs 411-430	
		Electronic Packaging & Production: Concurrent Engineering for Packaging, Fabrication & Assembly, Articles, May 1992	
		Andrew Mawer et al., "Calculation of Thermal Cycling and Applications Fatigue Life of the Plastic Ball Grid Array (BGA) Package", Proceeding of the 1993 International Electronics Packaging Conference, September 12-15, 1993 San Diego, California, vol. 2, pgs. 718-730	
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Examiner Signature	<i>John B. Vignata</i>	Date Considered	<i>09/09/02</i>
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<i>JB</i>		Surface Mount International Conference & Exposition: Proceedings of The Technical Program, San Jose, CA, Aug 28-Sept 1, 1994	
		C.E. Bauer, "Partitioning and Die Selection Strategies for Cost Effective MCM Design"; W.E. BERNIER et al., "BGA vs QFP: A Summary of Tradeoffs for Selection of High I/O Components"; A.J. MAWER et al., "Plastic Ball Grid Array Solder Joint Reliability Considerations"; Dr. W.C. Mak et al., "Increased SOIC Power Distribution Capability Through Board Design and Finite Element Modeling", Journal of Surface Mount Technology, October 1994	
		W.E. Bernier et al., "BGA vs QFP: A Summary of Tradeoffs for Selection of High I/O Components", Surface Mount International Conference & Exposition, Proceedings of The Technical Program, San Jose, CA, Aug 30-Sept 1, 1994 pgs. 181-185	
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		Charles L.Hutchins "Understanding Grid Array Packages", Surface Mount Technology Magazine, November 1994, pgs 12-13	
<i>✓</i>		Jennie S. Hwang, "Reliability of BGA Solder Interconnections" Surface Mount Technology Magazine, September 1994, pgs 14-15	

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JV		J. Lau et al., "No Clean Mass Reflow of Large Plastic Ball Grid Array Packages" Printed Circuit Interconnection Federation, Circuit World, Vol. 20, No. 3, March 1994, pgs 15-22	
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		Tony Mazzullo, "How IC Packages Affect PCB Design", Surface Mount Technology Magazine, Nepcon West '95, February 1995, pgs 114-116	
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Examiner Signature

John B. Vayns

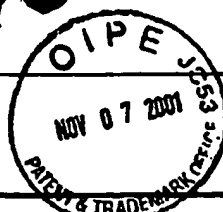
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Substitute for Form 1449A/PTO (Modi. (use as many sheets as necessary))		Attorney Docket No. 042390P3495C2	Application Number: 09/274,430
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JW		John U. Knickerbocker et al., "Materials: Ceramic BGA" Advanced Packaging Magazine, January/February 1995, pgs 20-25	
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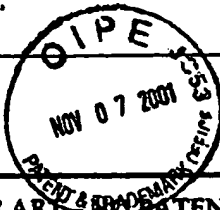
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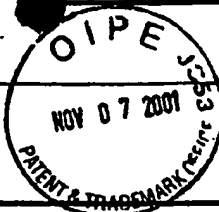
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JW		Bruce Freyman et al., "The Move to Perimeter Plastic BGA's" Surface Mount International, Proceedings of the Technical Program, San Jose, CA, August 1995	
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		Wai-Yeung Yip et al., "Package Characterization of a 313 Pin BGA" Proceedings of the Technical Program, Nepcon West '95 Conference, Anaheim, CA, February/March 1995, pp 1530-1540	

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<i>AB</i>		Michael Barrow, "Perimeter Matrix Ball Grid Array Circuit Package with a Populated Center", International Search Report, PCT/US97/03511, March 1996	
		LSI Logic Corporation, Package Selector Guide, 1991-1995	
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		Randy Johnson et al., "Thermal Characterization of 140 and 225 Pin Ball Grid Array Packages", Nepcon East '93 Conference, Boston, Ma, June 1993	
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		Andrew Mawer et al., "Calculation of Thermal Cycling and Application Fatigue Life of the Plastic Ball Grid Array (BGA) Package", Proceedings of the 1993 International Electronics Packaging Conference, Vol. 2, San Diego, Ca, September 1993	
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<i>✓</i>		Dr. W.C. Mak et al., "Increased SOIC Power Dissipation Capability Through Board Design and Finite Element Modeling" Surface Mount Technology Association, Journal of Surface Mount Technology, October 1994, pp 33-41	

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Substitute for Form 1449A/PTO (Mod.) (use as many sheets as necessary)		Attorney Docket No. 042390P3495C2	Application Number: 09/274,430
Page 11 of 11		First Named Inventor: Michael Barrow	Filing Date: March 22, 1999
OTHER ART - NO PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume, issue number(s), publisher, city and/or country where published	Translation ²
JPV		Philip E. Rogren, "MCM-L Built on Ball Grid Array Formats", Surface Mount International, Proceedings of the Technical Program, San Jose, Ca, August/September 1994	
		James J. Clementi et al., "Flip-Chip Assembly on CQFP Using No-Clean Processing" Proceedings 1995 International Flip Chip, Ball Grid Array, Tab and Advanced Packaging Symposium, San Jose, Ca, February 1995	
		Andrew Mawerand et al., "Reliable BGAs Take on Extra Routes" Electronic Engineering Times 98, Interconnects & Packaging, Issue 816, September 194	
		Johnathan L. Houghten, "Plastic Ball-Grid Arrays Continue to Evolve", February 6, 1995 issue of Electronic Design, Vol. 43, No. 3, pgs 5, 7, 141-146, Penton Publishing Inc., Cleveland, OH	
		Compaq, "Compaq's Proposed BGA Package for Low Cost High Volume Products" (one page), November 8, 1993	
		LSI Logic, Package Selector Guid 1994-1995, cover page, chapter cover page, pgs 8-27 and 8-31	
		Semiconductor Group Package Outlines Reference Guide, First Edition 1995, cover page and pp 6-20, Arrow Schweber	
		BGA Product Guide Updates, Amkor/Anam, June 1994	
		Steve Liew et al., Fax to Mike Barrow regarding BGA Details, December 21, 1994, pgs 1-2	

Examiner Signature	<i>John P. Uygur</i>	Date Considered	02/02/02
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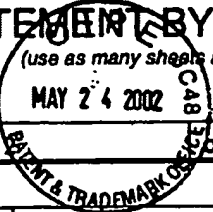
Paper No. 17

Paper No. 22

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

MAY 24 2002



Sheet 1

of 2

2

Complete If Known

Application Number	09/274,430
Filing Date	March 22, 1999
First Named Inventor:	Michael Barrow
Group Art Unit	2841
Examiner Name	David A. Foster <i>John Vignata</i>
Attorney Docket Number	042390P3495C2

OTHER ART - NO PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
<i>JBV</i>		Bruce Freyman et al. "Surface Mount Process Technology for Ball Grid Array Packaging", Surface Mount International, August 29-September 2, 1993, Amkor Electronics Inc., San Jose, California, pgs 81-85	
<i>JBV</i>		Johnathan L. Houghten "Plastic Ball-Grid Arrays Continue to Evolve", Electronic Design Magazine, February 6, 1995, pgs 141-146, Vol. 43, No. 3, Penton Publishing	
<i>JBV</i>		LSI Logic Corporation, Package Selector Guide 1994-1995, Second Edition, Milpitas, California	
<i>JBV</i>		LSI Logic Corporation, Package Selector Guide 1994-1995 Errata	
<i>JBV</i>		Semiconductor Group Package Outlines Reference Guide, Texas Instruments Incorporated, Plastic Ball Grid Array Drawings, 1995	

Examiner Signature	<i>John B. Vignata</i>	Date Considered	09/09/02
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